

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1. (Currently amended) A method for detecting ~~risky types~~ degrees of risk of data structures of a computer program code with a neural network, said neural network comprising at least two neurons, and the neurons being related to each other by a topological arrangement involving a neighborhood definition, each of the neurons ~~comprises~~ comprising a vector for representing elements of an input data space, at least one neuron having an associated label indicating the type of the neuron, and the data structures whose degrees of risk being detected comprising at least two data elements, ~~characterized in that~~ wherein the method comprises: [[,]]

extracting information of at least two data elements from at least one data structure,

forming at least two input vectors from said extracted information of the data elements, the vectors being compatible with the vectors of the neurons,

comparing said input vectors with said vectors of the neurons, ~~and~~

detecting ~~the~~ a type of said at least one data structure by using an associated label obtained on the basis of said comparison, and

presenting the type of said at least one data structure as data indicating a degree of risk of said at least one data structure.

2. (Currently amended) A method according to claim 1, ~~characterized in that~~ ~~in the method~~ wherein said ~~data~~ vectors of the neurons have been formed by applying a self-organizing learning process, ~~wherein~~ such that learning data vectors have been allowed to change ~~the~~ said vectors of the neurons by using a neighborhood mapping.

3. (Currently amended) A method according to claim 1, ~~characterized in that~~ wherein said neurons have been labeled on the basis of a labeling data item, wherein said labeling data item is examined to be at least one of the following; safe type data item, risky type data item, or fail type data item.

4. (Currently amended) A method according to claim 1, ~~characterized in that~~ ~~in the method~~ ~~the~~ wherein said input vectors are is compared to the vector of the neuron by using at least one of the following methods: the Euclidean distance, the Hamming distance, the Taxicab drivers distance, L1 norm, or dot product.

5. (Currently amended) A method according to claim 4, ~~characterized in that~~ ~~in the method~~ wherein the type of ~~the~~ said at least one data structure is detected by selecting the label of a neuron whose vector has the closest metric.

6. (Currently amended) A method according to claim 4, ~~characterized in that~~  
~~in the method~~ wherein the type of the said at least one data structure is detected by  
selecting the label of the closest neighbor of the neuron whose vector has the closest  
metric.

7. (Currently amended) A method according to claim 4, ~~characterized in that~~  
~~in the method~~ wherein the type of the said at least one data structure is detected by  
selecting the label of the closest labeled neuron on the map next to the neuron whose  
vector has the closest metric.

8. (Currently amended) An electronic device (~~400~~) for detecting ~~risky types~~  
degrees of risk of data structures of a computer program code with a neural network, said  
neural network comprising at least two neurons, and the neurons being related to each  
other by a topological arrangement involving a neighborhood definition, each of the  
neurons ~~each comprises~~ comprising a vector for representing elements of an input data  
space, at least one neuron having an associated label indicating the type of the neuron,  
and the data structures whose degrees of risk being detected comprising at least two data  
elements, ~~characterized in that~~ the electronic device comprises, comprising:

extracting means (~~401, 402, 406~~) for extracting information of at least two data  
elements from at least one data structure,

formation means ~~(401, 402, 406)~~ for forming at least two input vectors from said extracted information of the data elements, the vectors being compatible with the vectors of the neurons,  
comparison means ~~(401, 402, 406)~~ for comparing said input vectors with said vectors of the neurons, ~~and~~  
detecting means ~~(401, 402, 406)~~ for detecting ~~a~~ the type of said at least one data structure by using an associated label obtained on the basis of said comparison, and  
presenting means for presenting the type of said at least one data structure as data indicating a degree of risk of said at least one data structure.

9. (Currently amended) An electronic device according to claim 8, ~~characterized in that the device~~ further comprising second forming means ~~(401, 402, 406)~~ for forming said ~~data~~ vectors of the neurons by applying a self-organizing learning process, wherein learning data vectors have been allowed to change the vectors of the neurons by using a neighborhood mapping.

10. (Currently amended) An electronic device according to claim 9, ~~characterized in that~~ wherein the second forming means ~~(401, 402, 406)~~ are further arranged to label the neurons on the basis of a labeling data item, wherein said labeling data item is examined to be at least one of the following; safe type data item, risky type data item, or fail type data item.

11. (Currently amended) An electronic device according to claim 8, ~~characterized in that in~~ wherein the comparison means ~~(401, 402, 406)~~ are arranged to compare the input vector to the vector of the neuron by using at least one of the following methods: the Euclidean distance, the Hamming distance, the Taxicab drivers distance, L1 norm, or dot product.

12. (Currently amended) An electronic device according to claim 8, ~~characterized in that~~ wherein the detecting means ~~(401, 402, 406)~~ are arranged to detect the type of the said at least one data structure by selecting the label of a neuron whose vector has the closest metric.

13. (Currently amended) An electronic device according to claim 8, ~~characterized in that~~ wherein the detecting means ~~(401, 402, 406)~~ are arranged to detect the type of the said at least one data structure by selecting the label of the closest neighbor of the neuron whose vector has the closest metric.

14. (Currently amended) An electronic device according to claim 8, ~~characterized in that~~ wherein the detecting means ~~(401, 402, 406)~~ are arranged to detect the type of the said at least one data structure by selecting the label of the closest labeled neuron on the map next to the neuron whose vector has the closest metric.

15. (Currently amended) A computer program product for an electronic device for detecting ~~risky types~~ degrees of risk of data structures of a computer program code with a neural network, said neural network comprising at least two neurons, and the neurons being related to each other by a topological arrangement involving a neighborhood definition, each of the neurons ~~comprises~~ comprising a vector for representing elements of an input data space, at least one neuron having an associated label indicating the type of the neuron, and the data structures whose degrees of risk being detected comprising at least two data elements, ~~characterized in that~~ the computer program product ~~comprises,~~ comprising:

computer program code for causing the electronic device to extract information of  
at least two data elements from at least one data structure,  
computer program code for causing the electronic device to form at least two  
input vectors from said extracted information of the data elements, the  
vectors being compatible with the vectors of the neurons,  
computer program code for causing the electronic device to compare said input  
vectors with said vectors of the neurons, ~~and~~  
computer program code for causing the electronic device to detect ~~the~~ a type of  
said at least one data structure by using an associated label obtained on the  
basis of said comparison, and  
computer program code for causing the electronic device to present the type of  
said at least one data structure as data indicating a degree of risk of said at  
least one data structure.